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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/871,730	06/04/2001	Takaaki Tsuboi	TSUBOI 3	1417

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EXAMINER

MOHANDESI, IRAJ A

ART UNIT PAPER NUMBER

2834

DATE MAILED: 07/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/871,730

Applicant(s)

TSUBOI ET AL.

Examiner

Iraj A Mohandesi

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 recites the limitation “ *the three armature windings* ”.

There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,3-9,11 are rejected under 35 U.S.C. 102(b) as being anticipated by

Chitayat US patent 4,749.921.

Chitayat'921 discloses a sliding means with build-in moving magnet linear motor, comprising a bed (13, Fig. 1, column 5, line 52), a table arranged movable lengthwise of the bed in a sliding manner (14, 30,32 Fig.1. column 4,line 55), a field magnet arranged on a surface of the table (34, Fig. 1.column 4,line 57), an armature winding (28. Fig.2 column 4,line 54), installed on the surface of the bed, which confronts the field magnet of the table (13,22,Fig. 2), a means for monitoring a position of the table with respect to the bed (74, Fig. 4, column 5,line 62), wherein three phase armature windings are provides to carry a three phase current (98A, 100B, 102C, column 4,line 44-45) so that

the three phase current flowing in the armature windings interacts with magnetic flux created by the field magnet to produce an electromagnetic force to drive the table along the bed in a sliding manner with a desired position control (column 6, line 1-10), wherein the position monitoring means is an optical encoder composed of an optical linear scale secured on the table and a sensor element installed on the bed in the opposition to the optical scale (assembly 74, 76, 78, 80, 82, 84, column 5, line 62-68), the table fits on the bed in a lengthwise sliding manner by a linear motion guide unit (15), which is composed of track rails (16), a slider mounted on the bed (18), for sliding movement, the field magnet is at most equal height to the linear motion guide unit while the armature winding is accommodated in a recess in the bed between the track rails. (Fig. 2), the field magnet is mounted on forward and at the end of the plates (Fig. 2), the winding is installed in juxtaposition along the sliding direction of the table (28, Fig. 2), the armature windings are attached to a coil board that is secured to the bed and the armature windings are formed in a flat shape and fixed in juxtaposition in the moving direction of the table (28, Fig. 2, 4), and molded in a form of rectangle (Fig. 5),

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2,10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chitayat'921** in view of **Morohashi US patent 5,838,079** and **Fujisawa US patent 6,348,746**.

Chitayat'921 discloses a sliding means with build-in moving magnet linear motor, comprising a bed (13, Fig. 1, column 5, line 52), a table arranged movable lengthwise of the bed in a sliding manner (14, 30,32 Fig.1. column 4,line 55) , a field magnet arranged on a surface of the table (34, Fig. 1.column 4,line 57), an armature winding (28. Fig.2 column 4,line 54), installed on the surface of the bed, which confronts the field magnet of the table (13,22,Fig. 2), a means for monitoring a position of the table with respect to the bed (74, Fig. 4, column 5,line 62), wherein three phase armature windings are provides to carry a three phase current (98A,100B,102C, column 4,line 44-45) so that the three phase current flowing in the armature windings interacts with magnetic flux created by the field magnet to produce an electromagnetic force to drive the table along the bed in a sliding manner with a desired position control (column 6,line 1-10), wherein the position monitoring means is an optical encoder composed of an optical linear scale secured on the table and a sensor element installed I the bed in the opposition to the optical scale (assembly **74**, 76,78,80,82,84 ,column5,line 62-68),the table fits on the bed in a lengthwise sliding manner by a linear motion guide unit (15) which is composed of track rails (16), a slider mounted of the bed (18),for sliding movement ,the field magnet is at most equal height to the linear motion guide unit while the armature winding is accommodated in a recess in the bed between the track rails. (Fig.2),the field magnet is mounted on forward and at the end of the plates (Fig.2),

the winding a installed in juxtaposition along the sliding direction of the table (28. Fig.2)
,the armature windings are attached to a coil board that is secured to the bed and the
armature windings are formed in a flat shape and fixed in juxtaposition in the moving
direction of the table (28, Fig. 2,4),and molded in a form of rectangle (Fig. 5),
However **Chitayat'921** fails to teach a permanent field magnet made of rare earth and
having five poles for three windings, and the armature winding molded of a resinous.
Morohashi'079 discloses a linear motor using a permanent field magnet made of rare
earth (column 8,line 45).

However **Chitayat'921**, **Morohashi'079** linear motor fails to teach a permanent magnet
filed with five poles for three windings, and the armature winding molded of a resinous.
Fujisawa'746 discloses a linear motor having armature winding molded of a
resinous((column 13 line 16-17).

Therefore it would have been obvious for one having ordinary skill in the art at the time
the invention was made to combine **Chitayat'921** linear motor with a permanent magnet
Made of rare earth material, was taught by **Morohashi'079** and combine with the
winding molded in resin for the purpose of increasing the intensity of the permanent
magnet and having insulating material around the winding for isolation.

With respect to the limitation in the claim 2.

It would also have been obvious for one having ordinary skill in the art at the time the
invention was made to optimize the number of the field magnet to five poles ,since it has
been held that discovering an optimum value of a result effective variable involves only
routine skill in the art. *In re Boesch*, 617 F.2d 272,205 USPQ 215 (CCPA 1980).

Allowable Subject Matter

4. Claim 12 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.


Communication

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Iraj A Mohandesi whose telephone number is (703)305-3242. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-0377.

I.M
July 29, 2002


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